

AMENDMENTS TO THE CLAIMS

Amend the claim set, replacing all prior versions, without prejudice or disclaimer of the subject matter thereof, as detailed in the following listing of amendments to the claims:

1-70. (Canceled)

71. (Currently Amended) A method of determining the status of a subject, the method being performed using a system including at least one end station coupled to a base station *via* a communications network, the base station including a processing system having a processor, the method including:

- a) obtaining subject data from cells in a biological sample obtained from the subject, the subject data being obtained from a single test and including respective values for each of a plurality of parameters, individual parameters being representative of a level, abundance or functional activity of a gene expression product in the cells, the parameter values being indicative of the current biological status of the subject;
- b) in the base station:
 - i) receiving the subject data from the end station *via* the communications network;
 - ii) comparing, using the processor, the subject data to predetermined data, the predetermined data including for each of a plurality of conditions:
 - (1) values for at least some of the parameters; and,
 - (2) an indication of the condition;
 - iii) determining, using the processor, the status of the subject in accordance with results of the comparison, the status indicating at least one of a presence, absence or degree of one or more of the conditions; and,
 - iv) transferring an indication of the subject status to the end station *via* the communications network.

72. (Previously Presented) A method according to claim 71, the indication of the condition including at least one of;

- a) an indication of a stage of a condition;
- b) an indication of a degree of a condition; and,
- c) an indication of a degree of health of a subject.

73. (Previously Presented) A method according to claim 71, wherein the number of parameters is sufficiently statistically significant to allow a number of conditions to be distinguished.

74. (Previously Presented) A method according to claim 71, wherein the number of parameters is greater than 100.

75. (Previously Presented) A method according to claim 71, wherein the number of parameters is greater than 1000.

76. (Previously Presented) A method according to claim 71, wherein the number of parameters is less than 6000.

77. (Previously Presented) A method according to claim 71, the method including generating a report representing the status of the subject.

78. (Previously Presented) A method according to claim 71, the method including determining the ability of the subject to perform in a sporting and/or racing event in accordance with at least one of the presence, absence or degree of any conditions.

79. (Canceled)

80. (Previously Presented) A method according to claim 71, wherein the parameters are determined from:

- a) blood samples; and,
- b) samples containing cells of the subject's immune system.

81. (Previously Presented) A method according to claim 71, the predetermined data including phenotypic information of individuals, and the subject data including phenotypic information regarding the subject, the phenotypic information including details of one or more phenotypic traits.

82. (Previously Presented) A method according to claim 81, the method including comparing the subject data to predetermined data for individuals having one or more phenotypic traits in common with the subject.

83. (Previously Presented) A method according to claim 71, wherein the predetermined data are diagnostic signatures, the method including determining a diagnostic signature for a respective condition by data mining subject data relating to a number of individuals having known conditions, or degrees of conditions, each diagnostic signature including a range of values for at least some of the parameters.

84. (Previously presented) A method according to claim 83, wherein the predetermined data are determined by at least one of:

- a) clinical trials; and,
- b) diagnosis of conditions within subjects.

85. (Previously presented) A method according to claim 84, wherein the diagnosis of conditions within subjects for determining the predetermined data is performed in accordance with the method comprising the steps of:

- a) obtaining subject data from cells in a biological sample obtained from the subject, the subject data being obtained from a single test and including respective values for each of a plurality of parameters, individual parameters being representative of the level, abundance or functional activity of a gene expression product in the cells, the parameter values being indicative of the current biological status of the subject;
- b) comparing the subject data to predetermined data, the predetermined data including for each of a plurality of conditions:
 - i) Values for at least some of the parameters; and,

- ii) An indication of the condition; and,
 - c) determining the status of the subject in accordance with results of the comparison, the status indicating at least one of the presence, absence or degree of one or more of the conditions; and,
- wherein the diagnosis is subsequently confirmed by a medical practitioner or veterinarian.

86. (Previously Presented) A method according to claim 71, wherein the predetermined data are diagnostic signatures, the method including determining a diagnostic signature for a respective condition by:

- a) obtaining data relating to a number of individuals, the data including:
 - i) an indication of the status of each individual; and,
 - ii) respective values for each of the plurality of parameters; and,
- b) selecting one or more groups of individuals in accordance with the status of the individuals and the condition; and,
- c) determining a range of parameter values for each group in accordance with the parameter values of the individuals, the range of parameter values representing a diagnostic signature for the respective group.

87. (Previously presented) A method according to claim 86, the method including:

- a) comparing the data for each of the individuals to predetermined criteria; and,
- b) selectively excluding one or more individuals from a respective group in accordance with the results of the comparison.

88. (Previously presented) A method according to claim 87, the method including:

- a) receiving confirmation of the determined status;
- b) comparing the data for each of the individuals to predetermined criteria; and,
- c) updating the predetermined data in accordance with the confirmed status and the subject data in response to a successful comparison.

89. (Previously Presented) A method according to claim 87, wherein the predetermined

criteria represents quality control criteria.

90. (Previously presented) A method according to claim 87, the method including:

- a) comparing the data for each of the individuals to each other; and,
- b) selectively excluding one or more individuals from a respective group in accordance with the results of the comparison.

91. (Previously presented) A method according to claim 87, the method including, for each selected group:

- a) determining parameters that allow the group to be distinguished from each other group; and,
- b) determining a range of parameter values for the selected parameters in accordance with the parameter values of the individuals in the group.

92. (Currently amended) A method according to claim 87, the method including for each condition:

- a) determining parameters that allow the degree of the condition to be determined; and,
- b) determining a range of parameter values for the selected parameters taking account of the relationship between these parameter values and the degree of the condition.

93. (Previously presented) A method according to claim 87, the method including for each diagnostic signature:

- a) obtaining data for an individual having the respective condition;
- b) comparing the parameter values for the individual to the respective diagnostic signature; and,
- c) revising the diagnostic signature in accordance with an unsuccessful comparison.

94. (Canceled)

95. (Previously presented) A method according to claim 87, wherein the subject and individuals are at least one of:

- a) horses;
- b) camels;
- c) greyhounds;
- d) human athletes; and,
- e) other performance animals.

96 - 146. (Canceled)

147. (Previously presented) An apparatus for determining the status of a subject, the apparatus including at least one end station coupled to a base station *via* a communications network, the base station including a processing system for:

- a) receiving subject data from the end station *via* the communications network, the subject data being obtained from cells in a biological sample obtained from the subject, being obtained from a single test, and including respective values for each of a plurality of parameters, individual parameters being representative of a level, abundance or functional activity of a gene expression product in the cells, the parameter values being indicative of the current biological status of the subject;
- b) comparing the subject data to predetermined data, the predetermined data including for each of a plurality of conditions:
 - i) values for at least some of the parameters; and,
 - ii) an indication of the condition;
- c) determining the status of the subject in accordance with results of the comparison, the status indicating at least one of a presence, absence or degree of one or more of the conditions; and,
- d) transferring an indication of the subject status to the end station *via* the communications network.